

REMARKS

In response to the Office Action mailed August 18, 2004, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, have cancelled claims, and have added new claims.

Claims 1-31 were pending in this Application. By this Amendment, claim 6 has been amended, claim 31 has been cancelled, and claims 32-36 have been added. Accordingly, claims 1-30 and 32-36 are now pending in this Application. Claims 1, 14, 17, 29, and 30 are independent claims and the remaining claims are dependent claims. The Applicant believes that the claims as presented are in condition for allowance. A notice to this affect is respectfully requested.

Claims 1-31 have been rejected. Claim 23 has been objected to as reciting the phrase "(downstream device = network device)". Additionally, claim 23 is objected to because the claim numbering for claim 23 is incorrect. The Office Action indicates that claim number 23 is repeated twice and the content of the first claim 23 is different than the content of the second claim 23.

Claim 6 has been rejected under 35 U.S.C. §112 as having insufficient antecedent basis for the term "acknowledgement". Claims 1-4, 6-20, and 22-31 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,754,706 by Swildens et al. (hereinafter Swildens). Claims 5 and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Swildens in view of U.S. Patent No. 6,708,215 by Hingorani et al. (hereinafter Hingorani). The Applicant respectfully disagrees with these contentions and asserts that the present claimed invention is not anticipated by any disclosure in the Swildens and Hingorani references, either alone or in combination.

Claim Amendments

Claim 6 has been amended to clarify the nature of the invention. The Office Action states that the term "acknowledgement" in claim 6 has insufficient antecedent basis. However, upon further review of claim 6, in light of claim 1,

the Applicant has amended the claim to remove the language "on the communications interface". Claim 6 now recites "in the step determining if the network device receives an acknowledgment of receipt of the second data distribution message". Claim 6 clearly recites the "acknowledgement" as being "an acknowledgment of receipt of the second data distribution message". Referring to claim 1, the term "acknowledgement" does have proper antecedent basis to the second data distribution message. Reconsideration of the rejection is respectfully requested.

Claim 23 (e.g., the second claim 23 as originally presented) has been amended to remove the phrase "(downstream device = network device)" as advised by the Examiner. The amendment does not add new matter to the application. Additionally, the Office Action indicates that claim number 23 is repeated two times and the content of the first claim 23 is different than the content of the second claim 23. As such, the second claim 23, as originally presented, has been renumbered as claim 32. The Office Action has indicated that the Examiner will treat the claim as a new claim.

Newly Added Claims

Claims 32-36 have been added and are believed to be in allowable condition.

Claim 32 was originally presented as improperly numbered claim 23 (e.g., the second claim 23 as originally presented). Addition of this claim does not add new matter to the application.

Claims 33 and 34 provide clarification and define the "stream of data" recited in independent claims 1 and 17, respectively. Support for claims 33 and 34 is provided within the specification on page 21, lines 16-17, for example. No new matter has been added to the application by addition of the claims.

Claims 35 and 36 have been amended to include "the stream of data transmitted between the upstream device and a downstream device via a multicast protocol and the network device not multicast enabled". Support for

claims 35 and 36 is provided within the specification on page 23, lines 9-17, for example. No new matter has been added to the application by addition of the claims.

Swildens and Hingorani References

Swildens relates to routing and load balancing of traffic in a Domain Name System in a computer environment.¹ Regarding Swildens' Fig. 2, Swildens describes the basic process an existing load balancing DNS server uses to respond to a client request. In Swildens:

"[a] User 101 makes a request to resolve a name www.name.com 102 to the User's Client DNS Server 103. The Client DNS Server 104 sends the request 104 to the DNS Server 105 because the DNS Server 105 is authoritative for the domain www.name.com within the Network Servers 106.

The DNS server 105 determines the load and availability of the content servers 107, 108. The DNS server 105 consults a table containing persistent entries, using the Client DNS Server (which identifies a group of users) and hostname as keys, to determine if a persistent response should be returned.

If not, the DNS server 105 determines the availability and latency from its content servers 107, 108 to the Client DNS server 103. The DNS server 105 returns a response to the Client DNS Server 103 which returns a response to the User 101."²

Additionally, Swildens includes latency probes that send DNS servers latency metric information.³ In Swildens, "[t]he latency probe will perform one of any number of methods to determine the latency (network round trip time) from its location to a client DNS location. One probe that could be performed would be sending a `ping` packet to the client DNS."⁴

¹ Swildens, col. 1, l. 15-17.

² Swildens, col. 4, l. 3-20.

³ Swildens, col. 6, l. 22-25.

⁴ Swildens, col. 6, l. 29-33.

Hingorani relates to customer interaction systems and provides a system that monitors the access of information by an individual or system.⁵

Rejections under §102(b)

Independent claims 1, 14, 17, 29, 30, and 31 are rejected under 35 U.S.C. §102(b) as being anticipated by Swildens.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."⁶ "The identical invention must be shown in as complete detail as is contained in the ... claim."⁷

Independent claim 1, relates to a method of establishing a communications path through a network device in a network for a stream of data. The method includes the steps of receiving a first data distribution message from an upstream device in the network, acknowledging receipt of the first data distribution message to the upstream device in the network, and forwarding a second data distribution message to a downstream device in the network. The method also includes the step of determining if the network device receives an acknowledgment of receipt of the second data distribution message. If the network device receives an acknowledgment the network device establishes at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.

Independent claim 17 relates to a network device having a communications interface, a memory system, a processor, and an interconnection mechanism coupling the communications interface, the memory system, and the processor. The memory system is configured with a data distribution application, that when performed on the processor, provides a data

⁵ Hingorani, col. 1, l. 14-16.

⁶ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

⁷ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

distribution process that establishes a communications path through the network device in a network for a stream of data by performing the method steps outlined above.

Independent claim 29 relates to a computer program product having a computer-readable medium including data distribution application computer program logic encoded thereon for establishing a communications path through the network device in a network for a stream of data. The computer program logic, when performed on a processor within a communications device, causes the processor to perform the method steps outlined above. Independent claim 30 relates to a network device having a communications interface, a memory system, a processor, and an interconnection mechanism coupling the communications interface, the memory system, and the processor. The memory system is configured with a data distribution application, that when performed on the processor, provides a means for establishing a communications path through the network device in a network for a stream of data.

Swildens, however, does not anticipate independent claims 1, 17, 29, and 30 because Swildens does not teach or suggest each and every element of independent claims 1, 17, 29, and 30.

Each of the independent claims 1, 17, 29, and 30 include description of a network device “receiving a first data distribution message from an upstream device in the network” and “forwarding a second data distribution message to a downstream device in the network”. The Office Action states “Swildens teaches a first data distribution method from a device by receiving a request by the client DNS server upon a request from [a] user”. As such, the Office Action relates the client DNS server 103 of Swildens with the network device recited by the Applicant. The Office Action also states “Swildens teaches the second data distribution to a device in [the] network by sending the request from the client DNS server to [the] DNS server, therefore forwarding the second message to the DNS server in the network”. As such, the Office Action relates the DNS server 105 of Swildens with the downstream device recited by the Applicant.

Additionally, each of the independent claims 1, 17, 29, and 30 include description of the network device “determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment”. The Office Action states that “Swildens teaches the acknowledgment of receipt of second data and establishing a path by sending a ping packet from [the] DNS server to [the] client DNS server and use the router closest to [the] client DNS”. The ping packet in Swildens, however, is a latency probe that sends a DNS server latency metric information. In Swildens, the latency probe (e.g., ping packet) determines the latency (network round trip time) from its location to a client DNS location. While the ping packet provides latency metric information, Swildens does not teach or suggest the ping packet as providing the client DNS (e.g., Applicant’s network device) with “an acknowledgment of receipt of the second data distribution message” as claimed by the Applicant.

Because Swildens does not teach or suggest every element of the Applicant’s amended independent claims 1, 17, 29, and 30, the claims are patentable over Swildens and should be allowed to issue. Accordingly, the rejection of these claims should be withdrawn. Claims 2-13, which depend on claim 1 and claims 18-28, which depend upon claim 17 should also be allowed to issue as depending upon allowable independent claims (i.e., for at least the reasons presented). Reconsideration of the rejection is respectfully requested.

Independent claim 14 relates to a method of propagating payload data through a network device in a network. The method includes receiving a payload distribution message containing a data distribution header which includes a stream identifier identifying a stream of data. Based on the stream identifier, the method includes consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream

device in the network. The method also includes forwarding, for each path in the path table, at least a portion of the payload distribution message to a downstream device in the network such that the downstream device receives payload data within the payload distribution message.

Swildens, however, does not anticipate independent claim 14 because Swildens does not teach or suggest each and every element of independent claim 14.

The Office Action states that, with respect to Applicant's claim element "receiving a payload distribution message containing a data distribution header which includes a stream identifier identifying a stream of data", Swildens teaches "receiving a request and directing the request to the proper DNS after consulting a path table". The Office Action further states that with respect to Applicant's claim element "based on the stream identifier, consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream device in the network", Swildens "consults a table to see which of the addresses to use for the payload [data] to forward, hence determine which path to take".

The Office Action is incorrect in the describing the processing of the request in Swildens after the DNS server receives the request. Swildens, in column 2, lines 45-47 describes:

"A preferred embodiment of the invention receives requests from client DNS servers or other DNS servers. The invention checks to see if the client DNS server is part of the DNS group that the DNS server is authoritative. Each DNS server is associated with a subset of the DNS groups in the network.

If the DNS server is not authoritative for the client DNS server's group, then the request is forwarded to the proper DNS server."

As such, when the DNS server is not authoritative, the DNS server forwards the request to the proper DNS server **prior to consulting the path table**. Swildens **does not** indicate that the DNS server consults a path table to forward the request to another DNS server (e.g., a downstream device).

Swildens also indicates, in column 2, lines 47-51:

“Otherwise, the invention checks a persistence table to see if a persistent response is required for the request. If a persistent response is required, the appropriate IP address entry in the table is returned to the requester.

If a persistent response is not required, the invention determines the load, availability, and latency of the content servers from information stored in a latency table to determine the proper content server to reference. The proper content servers address is returned to the requestor.”

After the DNS server checks the persistence table, the DNS server provides a response **to the requestor** (e.g., the client DNS or an upstream device), **not** to the downstream device.

Therefore, Swildens describes consulting a persistence table prior to returning a response to an upstream device. Swildens does not teach or suggest element “based on the stream identifier, consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream device in the network” as claimed by the Applicant.

Because Swildens does not teach or suggest every element of the Applicant’s amended independent claim 14, the claims is patentable over Swildens and should be allowed to issue. Accordingly, the rejection of the claim should be withdrawn. Claims 15-16, which depend on claim 14 should also be allowed to issue as depending upon allowable independent claims (i.e., for at least the reasons presented). Reconsideration of the rejection is respectfully requested.

Rejections under §103(a)

Dependent claims 5 and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Swildens in view of Hingorani.

In order to establish a *prima facie* case of obviousness, the Office Action must meet three criteria.

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."⁸

As described above with respect to the Rejections under §102(b), Swildens does not teach or suggest every element of the Applicant's independent claims 1 and 17 and the claims are patentable over Swildens. As such, the combination of Swildens and Hingorani does not anticipate claim 5, which depends on allowable claim 1, and claim 21, which depends upon allowable claim 17. Reconsideration of the rejection is respectfully requested.

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In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

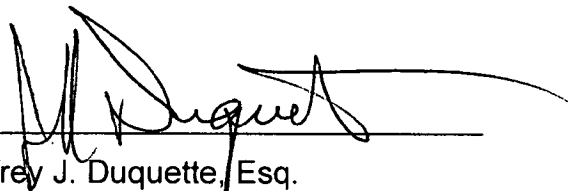
Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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